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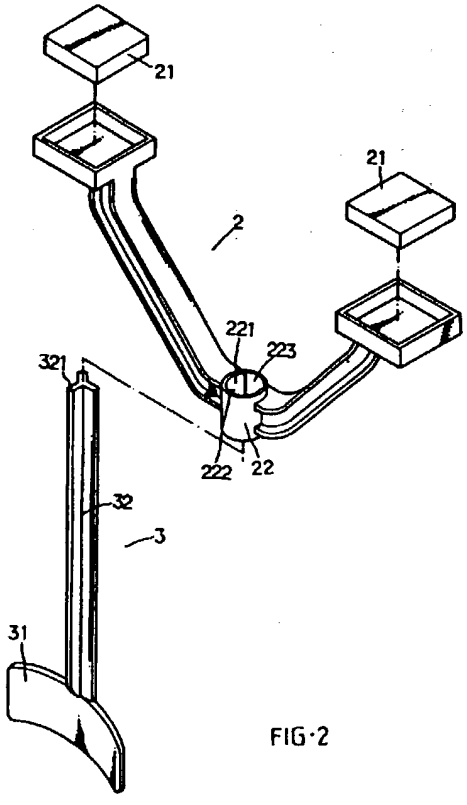
(54) Churn-dasher for microwave oven

(57) A churn dasher for use in a microwave oven having a rotary plate on which a container is placed is used to get liquid food received in the container evenly heated by stirring the food constantly. The churn dasher is removably attached to the ceiling of a microwave oven by a mounting bracket having magnets. An extended churning pole has stirring plate at the bottom of the pole and the pole is limitedly engaged with the mounting bracket in such a manner that the pole can only be vertically adjusted and be stopped from rotation with the rotary plate.



FIG·2

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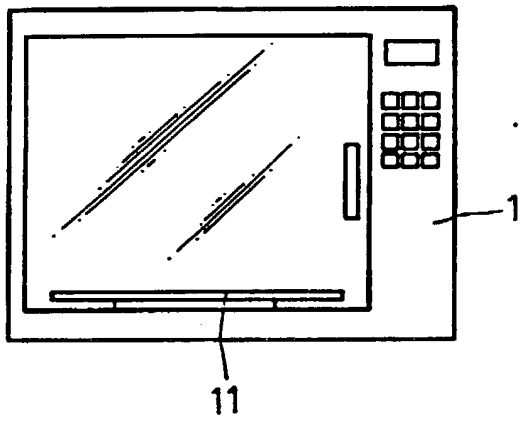
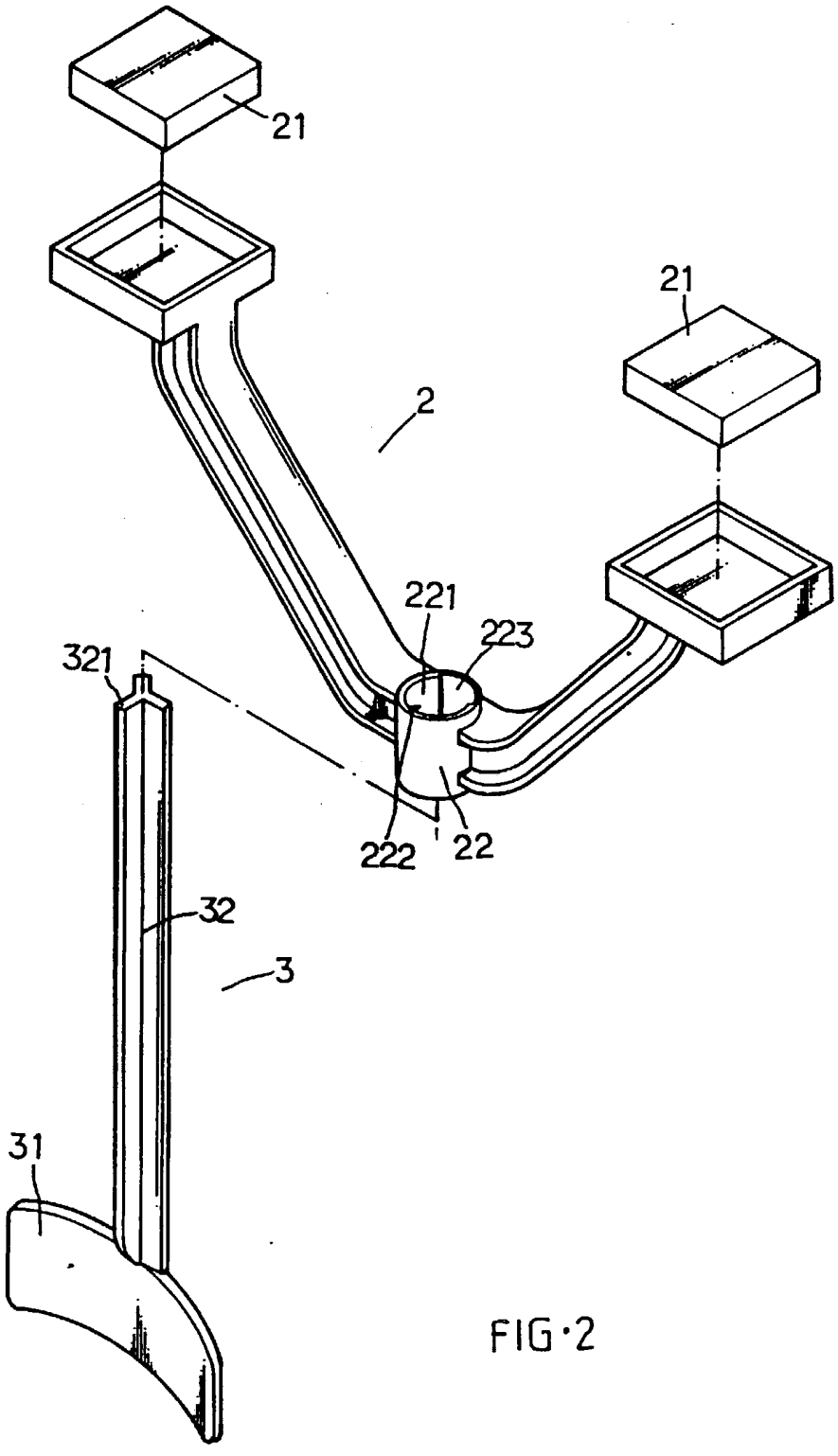
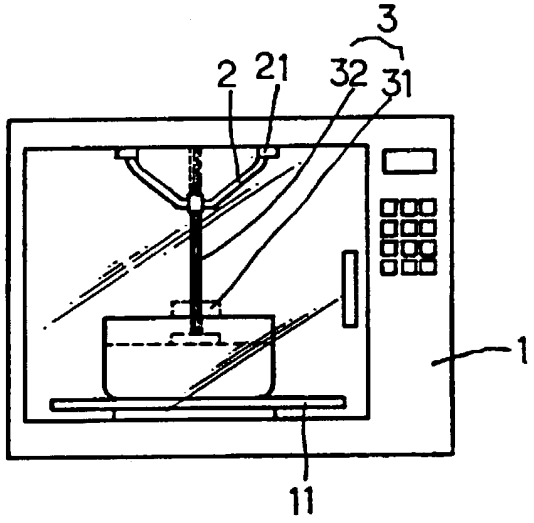


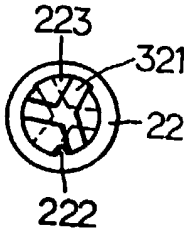
FIG·1



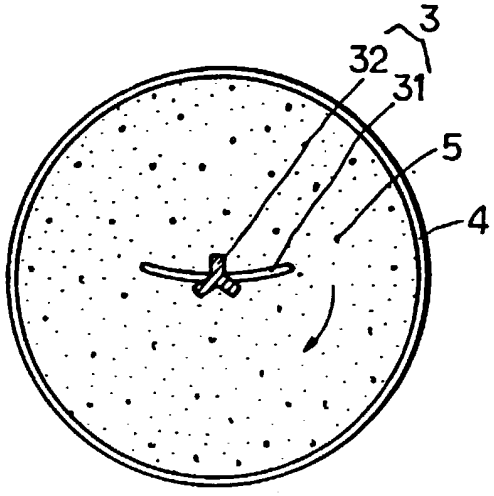
FIG·2



FIG·3



FIG·4



FIG·5

CHURN-DASHER FOR MICROWAVE OVEN

The present invention relates to a churn-dasher particularly adapted for use in a microwave oven having a rotary plate so as to stir up liquid food put therein for heating and defrozing so that the heating and defrozing operations can be effected in a smoother and faster manner.

Generally, microwave ovens of different brands sold on markets are frequently used to get food disposed therein heated up quickly. But, large-amount food of liquid form housed in a container is not easily heated evenly, particularly when such kinds of food as frozen soup, gruel or butter or salad containing substances are heated in a microwave oven, because heat does not easily be transmitted to the central portion of the heated substances of such kinds in a releatively short time.

A conventional microwave oven as shown in Fig. 1 is equipped with a rotary plate on which food to be heated is placed. Such rotary plate is particularly designed for effectively and evenly heating foods having irregular configuration, such as meat of chicken or duck, pork, beef and etc. However, it is not so easy to get large-amount food of liquid form evenly heated up in a microwave oven, because instant heat provided by a microwave oven is not able to be transmitted so quickly via liquid to the central

portion of the liquid food before the oven power is cut off.

It is considered advantageous in the present invention to provide a churn dasher for use in a microwave oven having a rotary plate so as to particularly permit food of liquid form to be evenly heated up.

It is also considered advantageous in the present invention to provide a churn dasher for use in a microwave oven which is provided with a churning pole adjustably engaged with a mounting bracket removably fixed to the ceiling of a microwave oven by magnets so that food of liquid form housed in a utensil placed on a rotary plate can be evenly stirred by way of the fixed churning pole.

Brief Description of the Drawings

Fig. 1 is a diagram showing a conventional microwave oven equipped with a rotary plate;

Fig. 2 is a perspective diagram of the present invention showing the exploded components thereof;

Fig. 3 is a plane view showing the mounting of the churn dasher onto a typical microwave oven;

Fig. 4 is a diagram showing the relation of the mounting bracket and the churning pole of the present invention;

Fig. 5 is a diagram showing the churn dasher stirring soup contained in a utensil.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT

Referring to Fig. 2, the churn dasher of the present invention is comprised of a mounting bracket 2 and a churning assembly 3. The mounting bracket 2 has two upwardly extended branches 20 each terminating in a horizontally defined receiving cavity 23 in which a magnet 21 is housed so that the mounting bracket 2 can be secured in place to the ceiling of a microwave oven.

At the intersection of the two extended branches 20 is disposed a tubular mounting hole 22 which is positioned at a lower level than the ends of the two extended branches and the churning assembly 3 is adjustably engaged with the mounting hole 22. On the interior wall of the mounting hole 22 is provided with an axial stop flange 222 and a recessed portion 223 disposed oppositely to the stop flange 222.

At the bottom end of the churning assembly 3 is disposed a stirring means 31 engaged with an elongated pole 32 having at least one axially extended stop block 321.

In practical operation, the mounting bracket 2 is

secured in place to the ceiling of a microwave oven 1 by means of magnets 21, and the pole 32 of the churning assembly 3 is inserted into the mounting hole 22 of the mounting bracket 2 in such a manner that the stop block 321 of the pole 32 is engaged with the recessed portion 223 of the mounting hole 22; then a utensil 4, particularly for use in a microwave oven, full of frozen liquid food 5 such as soup is placed on the rotary plate 11 and right under the combination of the mounting bracket 2 and the churning assembly 3 and let the pole 32 slide down freely so as to permit the surface of frozen liquid to be in abutment with the end of the stirring means 31, as shown in Fig.3.

The rotary plate 11 will be rotated as the microwave oven 1 is turned on, the frozen liquid food 5 becomes gradually melted and the stirring means 31 will penetrate to the center of the food 5 step by step accordingly. The stirring means 31 is forced to rotate by liquid food 5, so is the pole 32 simultaneously.

The pole 32 has three symmetric axially stop blocks 321, as shown in Fig.4, when two stop blocks 321 are in abutment against the axial stop flange 222 and one edge of the recessed portion 223, the rotation of the pole will then be stopped, permitting the pole 32 to slide downwardly only along with the stirred food, as shown in Fig. 5.

CLAIMS:

1. A churn dasher for use in a microwave oven having a rotary plate so as to stir up food of liquid form to effectively get the food heated, comprising:

a mounting bracket to removably secure the churn dasher to the interior ceiling of a microwave oven;

a churning assembly engaged with said mounting bracket in a vertically moveable manner;

said churning assembly having a downwardly extended churning pole having a stirring means disposed at the bottom of said pole;

said extended pole being vertically adjustable with respect to said mounting bracket and limited in rotation;

whereby food in liquid form received in a container placed on said rotary plate of said microwave oven with said stirring means plunged into liquid food received in said container can be evenly stirred up.

2. A churn dasher as claimed in Claim 1, wherein said mounting bracket has two upwardly extended branches, each having a horizontal cavity at the end thereof for housing a magnet therein so as to permit said mounting bracket to be removably secured to the ceiling of a microwave oven; a tubular mounting hole being defined at the intersection of said two branches for slidably receiving said extended churning pole of said churning assembly.

3. A churn dasher as claimed in Claim 2, wherein said tubular mounting hole has a stop flange and a recessed portion on the inner wall thereof so as to stop said extended churning pole of said churning

assembly from rotating when a stop block disposed on said extended pole engages with said stop flange.

4. A churn dasher for use in a microwave oven substantially as herein described with reference to the accompanying drawings.

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Patents Act 1977
Examiner's report to the Comptroller under Section 17
(The Search report)

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Relevant Technical Fields

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(ii) Int Cl (Ed.6) H05B (6/80)

Search Examiner
D MIDGLEY

Date of completion of Search
15 JUNE 1995

Databases (see below)
(i) UK Patent Office collections of GB, EP, WO and US patent specifications.

(ii) ONLINE: WPI

Documents considered relevant following a search in respect of Claims :-
1-4

Categories of documents

X: Document indicating lack of novelty or of inventive step.

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P: Document published on or after the declared priority date but before the filing date of the present application.

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&: Member of the same patent family; corresponding document.

Category	Identity of document and relevant passages		Relevant to claim(s)
X	EP 0312373 A1	(RAYTHEON) whole document	1
X	WO 93/10648 A1	(JANNAWAY) whole document	1

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